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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KERNS, KEVIN P

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,880

Applicant(s)

DELGADO, DAVID

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27,35 and 37-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27,35 and 37-42 is/are rejected.
- 7) ☒ Claim(s) 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The replacement and annotated drawing sheet (Figure 7) were received on December 1, 2005. These drawings are objected to since the annotated drawing sheet does not show that structure "64" is marked through and replaced with "62". As a result, these drawing sheets are not in agreement, and the applicant is required to resubmit these drawing sheets in the correct format.

Claim Objections

2. Claim 40 is objected to because of the following informalities: in the 2nd line of the claim, delete "the" after "wherein". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-3, 18-21, 35, and 37-39 are rejected under 35 U.S.C. 102(b) and/or 102(a) as being anticipated by the applicant's admitted prior art (specification; paragraph [0003]).

The applicant's admitted prior art includes the following: "Welding implements have been developed to enable the torch to have a degree of flexibility so that the electrode may be positioned relative to a user's hand. In a liquid-cooled torch, the flexibility is achieved by using a series of coiled tubes to secure the torch head to the torch. A shield gas is conveyed through the interior of one of the tubes. Additional tubes are used to convey cooling liquid to and from the torch head. The tubes are coiled around each other and may be flexed to reposition the torch head." This admitted prior art disclosure includes a flexible welding implement that comprises a torch head operable to couple electricity to a welding electrode disposed therein; a gas supply tube; cooling fluid supply and return tubes; and a plurality of biasing members (in the form of a series of coiled tubes, or springs, flexibly coiled around each other) that are operable to flexibly couple the (inflexible and/or uncoiled portions) of the gas supply and cooling fluid supply and return tubes to the torch head, while also serving as a tripod support system, in the form of three springs/coils that are flexibly secured to the torch head (specification; paragraph [0003]).

5. Claims 1-3, 10, 11, 13-25, 35, and 37-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Keller et al. (US 4,145,595).

Keller et al. disclose a flexible gas-shielded arc-welding torch, in which the torch includes an attached handle portion 11; a torch head (torch barrel 12) operable to couple electricity to a welding electrode 13 disposed therein; a cooling fluid supply tube, in the form of a pressurized gas from a gas source via connector 27, operable to convey

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the cooling fluid to the torch head 12; and a first biasing member (bendable conductive helix 25 that provides gas and current), in which the helix 25 is operable to flexibly couple the cooling fluid supply tube to the torch head 12 (abstract; column 2, lines 41-68; column 3, lines 1-25 and 48-68; column 4, line 1 through column 5, line 27; and Figures 1-5). Because the helix is embedded in and cushioned by an elastomeric material (serving as a tube support member), it is also feasible to make a double helix (forming a plurality of biasing members) of tubular wire when it is necessary to supply a cooling liquid having both a flow inlet (supply line) and a flow outlet (return line) to the torch, the combination of which would serve as a tripod support system, in the form of three springs/coils that are flexibly secured to the torch head (column 5, lines 19-27; and Figures 4 and 5).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over either the applicant's admitted prior art (specification; paragraph [0003]) or Keller et al. (US 4,145,595) in view of Delgado et al. (US 6,855,905).

The applicant's admitted prior art and Keller et al. individually disclose the elements of claims 1-3. Neither the applicant's admitted prior art nor Keller et al. specifically discloses the coupling of tubes via the plurality of biasing members.

However, Delgado et al. disclose a flexible welding torch having a restraining member, in which the welding torch further includes a torch head 32 operable to couple electricity to a welding electrode 24 disposed therein; a cooling fluid supply tube, in the form of a gas from cylinder 26, operable to convey the cooling fluid to the torch head 32; a first biasing member (coil assembly 36), in which the coil 40 of the coil assembly 36 is operable to flexibly couple the cooling fluid supply tube to the torch head 32; a flexible tube 38 disposed over the coil assembly 36; and coupling members (42,44) of the coil assembly 36, which are operable to couple tubes between the torch head and the gas and coolant supply, as well as coolant return, for the purpose of providing flexibility while limiting relative displacement of the coupling members (abstract; column 2, lines 2-24 and 60-67; column 3, lines 1-67; column 4, lines 1-61; and Figures 1-4).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify either of the flexible welding torches disclosed individually by the applicant's admitted prior art and Keller et al., by coupling the tubes via the biasing members, as taught by Delgado et al., in order to provide flexibility while limiting relative displacement of the coupling members (Delgado et al.; abstract; and column 2, lines 6-24).

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8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. (US 4,145,595) in view of Rehrig (US 5,403,987).

Keller et al. disclose the elements of claims 10 and 11. Keller et al. do not specifically disclose the use of heat shrink tubing for the flexible tube.

However, Rehrig discloses a flexible gas-shielded welding torch, in which the torch includes a torch head (12,16) operable to couple electricity to a welding electrode 18 disposed therein; a cooling fluid supply tube, in the form of a pressurized gas from a gas source via connector 50, operable to convey the cooling fluid to the torch head (12,16); a first biasing member (bendable metal helix 46 that provides gas and current), in which the helix 46 is operable to flexibly couple the cooling fluid supply tube to the torch head (12,16); and heat-resistant sealing tape 52 in the form of a heat shrinkable pliable sleeve, in which the heat shrink sleeve is advantageous for providing isolation and insulation to the metal helix (abstract; column 3, lines 7-53; column 4, lines 4-68; column 5, lines 1-68; column 6, lines 1-46; and Figures 1-3).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the flexible welding torch disclosed by Keller et al., by using heat shrink tubing for the flexible tube, as taught by Rehrig, in order to provide isolation and insulation to the metal helix (Rehrig; abstract; and column 6, lines 37-46).

9. Claims 26, 27, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. (US 4,145,595) in view of Willgohe et al. (US 3,999,033).

Keller et al. disclose the elements of claims 18, 25, 35, 40 and 41. Keller et al. do not disclose the use of wires braided together as a deformable support member.

However, Willgoths et al. disclose an arc welding torch having a flexible wire guide assembly, in which the assembly includes helically wound flexible wires braided together as the deformable support member, which is advantageous for providing a readily flexible wire guide assembly capable of universal adjustment without kinking and flattening during bending, thus having improved strength (abstract; column 2, lines 10-47 and 62-68; column 3, line 1 through column 5, line 13; and Figures 1-3).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the flexible welding torch disclosed by Keller et al., by using wires that are braided together as a deformable support member, as taught by Willgoths et al., in order to provide a readily flexible wire guide assembly capable of universal adjustment without kinking and flattening during bending, thus having improved strength (Willgoths et al.; column 2, lines 43-47).

Response to Arguments

10. The examiner acknowledges the applicant's amendment and drawing sheets received by the USPTO on December 1, 2005. The applicant's amendments/remarks overcome prior objections to the abstract, specification, and claims, as well as prior 35 USC 112, 2nd paragraph rejections. The amendment also overcomes prior drawing objections, with the exception of the mismatch between the replacement and annotated drawing sheet (see paragraph 1). A new claim objection to claim 40 has been raised by

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the amendment (see paragraph 2). The applicant's amendments to claim 1 have overcome the prior 35 USC 102(b)/(e) rejections of claim 1 based on the Rehrig, Kleppen, Jr., and Delgado et al. references. The applicant has cancelled claim 36. Claims 1-27, 35, and 37-42 are currently under consideration in the application.

11. Applicant's arguments filed December 1, 2005 have been fully considered but they are not persuasive.

With regard to the applicant's arguments/remarks on pages 14-18 of the amendment, which address the 35 USC 102(b) rejections based on Keller et al., as well as the 35 USC 102(b)/(a) rejections based on the applicant's admitted prior art (AAPA), the examiner respectfully disagrees with the applicant's assertions that these claims are patentable over these references.

Regarding the applicant's arguments addressing the AAPA on pages 14-16, the applicant states on the bottom of page 14 that the AAPA (as cited in paragraph [0003] of the "Background of the Invention" section) is not properly applied. The examiner respectfully disagrees, as the specification background (and any "Prior Art" drawings that would apply, if present) is to be considered as prior art, despite a lack of one or more reference(s) to any prior patent or publication. As the applicant is well aware, patent applicants often mention "prior art" in their "Background" section, and then discuss why the invention is an improvement over this AAPA. It is only a question of whether or not this AAPA was more than one year prior to the applicant's invention, and whether or not this AAPA was by the inventor or another, thus qualifying it as prior art

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under 35 USC 102(b) or 35 USC 102(a). Furthermore, the AAPA set forth in paragraph [0003] of the specification remains valid as rejections under 35 USC 102(b)/(a) (see above paragraph 4), as the “biasing member” of claim 1 is present in the AAPA as follows: “flexibility is achieved by using a series of coiled tubes to secure the torch head to the torch” and “The tubes are coiled around each other and may be flexed to reposition the torch head.” In addition, the cooling fluid flow (see the 1st paragraph of page 15) includes an “axial” component despite the generally “circumferential” flow through the coiled tubes. In other words, cooling fluid flows both axially and circumferentially, and these coiled tubes are also “capable of” being flexed by the welding operator to obtain a cooling fluid flow which would be even further considered as “axial” than in its original (unflexed) position. In claim 18, the welding implement of the AAPA is considered to be a “tripod support system”, since a “coiled tube” is considered to be equivalent to a “spring”, as both structures have potential energy (to be transformed into kinetic energy if not restrained within the torch head). In claim 35, the AAPA has a “plurality of tubes” (in the torch body – in which these tubes would extend through the back of the torch body and to separate external cooling fluid and gas supplies) that extend to the flexible “plurality of coils” secured to the torch head.

Regarding the applicant’s arguments addressing Keller et al. on pages 16-18, the applicant is referred to the above discussion of “axial” and “circumferential” flow that addresses claims 1, 10, and 35, which applies to Keller et al. as well as the AAPA. In claim 18, the flexible double helix disclosed by Keller et al. is considered as two springs, with the elastomeric material (serving as a tube support member) being considered as

the other spring, thus forming the "tripod support system" as claimed. Although the examiner agrees with the applicant in the fact that gas flows through bore 29 (as applicant mentions in the last paragraph of page 17), gas is supplied axially within the body of the elastomeric material surrounding bore 29, and this would be considered as the "third leg comprising a third spring".

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 1/11/06*
Primary Examiner
Art Unit 1725

KPK

kpk

January 11, 2006